

Reply to Office Action of March 28, 2005  
Amendment Dated: April 7, 2005

Appl. No.: 09/785,884  
Attorney Docket No.: CSCO-002/94701

### REMARKS

Claims 1-66 were examined in the office action mailed on March 28, 2005 (hereafter "Outstanding Office Action"). The final rejection of the prior office action was withdrawn and the Examiner is sincerely thanked for the same. All claims 66 were rejected under 35 U.S.C. § 103 in the Outstanding Office Action. Reconsideration is respectfully requested in view of the following remarks.

Claim 1 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Ketcham (U.S. Patent Number 6,721,334) in view of Pereira (U.S. Patent Number 5,781,726). It is respectfully asserted that the references, either individually or in combination, do not disclose or suggest one or more features of original claim 1.

A method of processing a plurality of keep-alive messages generated by a corresponding plurality of end systems, *each of said plurality of keep-alive messages being designed to request the status of a corresponding point to point (PPP) session* implemented on a communication network, said method comprising:  
receiving in an aggregation device said plurality of keep-alive messages;  
generating in said aggregation device *an aggregated request packet which indicates that the status of said PPP sessions is requested*; and  
sending said aggregated request packet on said communication network to a peer aggregation device.  
(Original Claim 1, *Emphasis Added*)

Thus, in a method according to claim 1, each keep-alive message is designed to request the status of a corresponding PPP session. An aggregation device receives the keep-alive messages and generates an aggregated request packet which indicates that the status of the PPP sessions is requested. The aggregated request packet is then sent to a peer aggregation device. Due to such use of an aggregated packet, traffic on the communication network may be reduced.

It is applicant's position that Ketcham and Pereira, neither individually nor in combination, teach or suggest one or more features of claim 1. In addition, the techniques taught by Pereira teach away from the features of claim 1 noted above. Applicant explains below the basis for such assertions.

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With respect to Ketcham, it appears that the Examiner is conceding that Ketcham does not specifically disclose or suggest aggregation of keep-alive messages into a single aggregated request packet, as recited in claim 1. See Page 3, lines 4-6 of the Outstanding Office Action. Instead, the examiner relied upon Pereira for the corresponding features in rejecting the claims under 35 U.S.C. § 103. Applicant now explains the basis for the position that Pereira does not disclose the specific way in which the keep-alive messages are processed as in claim 1, and in addition, Pereira uses techniques which teach away from the feature of claim 1.

Pereira discloses traffic optimization techniques while teaching in relevant parts:

Traffic involved in maintaining a set of connection oriented sessions between end stations in a network is managed to optimize and reduce the polling traffic needed to maintain the connection oriented sessions across a common link between edge devices. *At a first edge device, a member of a set of connection oriented sessions is selected as a polling session. Request polling traffic of that polling session is forwarded from a first edge device to the second edge device. All other polling traffic from other members of the set of connection oriented sessions is blocked at the first edge device.* The set of connection oriented sessions is maintained in response to polling traffic of the selected polling session. A similar algorithm is executed at the second edge device to manage the traffic in both directions across the common link. The step of selecting a polling session for use across the intermediate link includes changing the polling session from one to another member of the set of connection oriented sessions from time to time. Preferably, this is done in a round robin fashion, so that each of the connection oriented sessions is utilized in turn for maintaining the intermediate link. *The technique is based on dividing the connection oriented sessions into a first link session between the first edge device and a first end station coupled to the first edge device, an immediate session between the first and second edge devices, and a second link session between the second edge device and a second end station coupled to the second edge device.*

(Abstract of Pereira. *Emphasis Added*)

From the above teachings of Pereira, each connection oriented session there appears to be (logically) divided into three link sessions, with each link session corresponding to a segment formed by the four devices - two edge devices (e.g., d1 and d2) and two end stations (s1 and s2)-. Traffic optimization is attained between the two edge devices (d1 and d2).

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In particular, the optimization in Pereira appears to be obtained by forwarding (say in edge device d1) polling traffic of one selected polling session, while blocking the polling traffic from other sessions. The polling feature, end-to-end between the two end stations, appears to be supported by managing the remaining two link sessions (between each end station and corresponding edge device, i.e., d1-e1 and d2-e2).

It is thus concluded that Pereira would resort to blocking of polling traffic for traffic optimization, while the method of claim 1 uses an aggregated request packet which indicates that the status of the PPP sessions is requested. The techniques of both Pereira and claim 1 would result in reduced traffic on the communication network.

It is accordingly respectfully submitted that Pereira does not disclose such features of claim 1. In addition, Pereira teaches away from the technique of claim 1 since Pereira uses techniques which are different from (and seemingly incompatible with) the techniques of claim 1 to achieve similar objective (traffic optimization).

Therefore, contrary to the assertion in the Outstanding Office Action, the combination of Ketcham and Pereira does not render obvious the invention of claim 1. Accordingly, independent claim 1 is allowable over the art of record. Dependent claims 2-9 are allowable at least as depending from an allowable base claim.

Dependent claim 2 is independently allowable at least in that the aggregated reply packet indicates the status of the specific sessions that are contained in the received aggregated request packet. Ketcham would not disclose or suggest such a feature since Ketcham merely appears to aggregate several types of data, without specifically disclosing the keep-alive messages (as also conceded by the Examiner). Pereira also would not disclose or suggest such a feature since Pereira relies on blocking of polling requests from several sessions, as explained above. Claim 3 is also independently allowable for similar reasons.

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Independent claim 10 is also allowable in that the art of record would lack the motivation to examine an aggregated request packet and to generate an aggregated reply packet at least for reasons explained above.

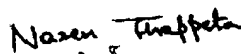
5 The remaining independent claims are also allowable at least for reasons noted above. The presented dependent claims are allowable at least as depending from corresponding allowable base claims.

10 Therefore, Applicant respectfully submits that all the objections/rejections of record are believed to be overcome, and all the claims presented for consideration are allowable over the art of record. Withdrawal of the rejections of record is accordingly respectfully requested.

The Examiner is invited to telephone the undersigned representative if it is believed that an interview might be useful for any reason.

Respectfully submitted,

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